DEVELOPMENT OF SINGLE SUPPLY SYSTEM STOCK FUNDING PROCEDURES FOR DEPOT-LEVEL REPARABLES UNDER A CENTRALIZED GENERAL SUPPORT MANAGEMENT ACTIVITY

THESIS

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AFIT/GLM/LSM/91S-60

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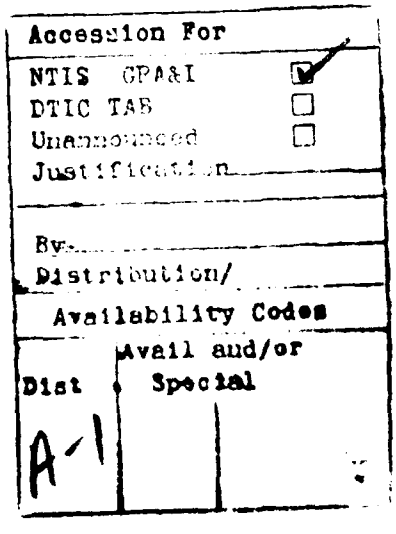

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Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

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Captain, USA

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Preface

The purpose of this study was to evaluate two proposals for developing stock funding procedures concerning depot-level reparables within the Department of the Army. The evaluation was between one original proposal by the Logistics Management Institute (LMI) and a modified version of that proposal submitted by their sponsoring office, the Strategic Logistics Agency (SLA), Office of the Deputy Chief of Staff, Logistics, United States Army.

The study concerned the use of both qualitative and quantitative data resulting from procedural development and actual procedure applications of the proposals. Although largely subjective in nature, the proposals and the study itself demonstrate a complex and extensive task in adopting stock fund management under the Army's current supply system. Evaluating the impacts to Army stock fund management and its supply process, in general, under a single supply system should be continued. The benefits from such a system for efficient, centralized supply management in the Army of the future could prove significant.

I am most grateful for the assistance I received in my research from members of LMI, SLA, the US Army Quartermaster Center and School's Supply and Professional Development Department, and my advisor, Captain Brent Herold. A special thanks is offered to my wife and family for their support.

Robert E. R. Spoo

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Abstract

This study investigated the applicability of adopting a single supply system stock funding procedure for depot-level reparables within the Department of the Army. A subjective comparison was made of a major proposal for depot-level reparable stock funding developed under contract by the Logistics Management Institute, in association with the Strategic Logistics Agency, and a modified version of that proposal later submitted by the Strategic Logistics Agency. Each proposal was appraised for its affect on adaptability to a single supply system, centralization of management functions, interoperability with other services, and speed of implementation. Field test results and early studies in stock funding were used in the analysis. Using a numerical decision-making process, whereby a point-value was assigned for the given evaluation criteria, the investigation revealed that of the two proposals the Logistics Management Proposal best suited current Army needs. The study further provided that a centralized management policy under a vertical supply system for stock funding of depot-level reparables would seem more effective and appropriate than a decentralized, horizontal supply system.

DEVELOPMENT OF SINGLE SUPPLY SYSTEM STOCK FUNDING PROCEDURES FOR DEPOT LEVEL REPARABLES UNDER A CENTRALIZED GENERAL SUPPORT MANAGEMENT ACTIVITY

I. Introduction

This study addresses stock funding procedures currently under development by the United States Army for depot-level reparable (DLR) items.

General Issue

A Department of Defense Management Review (DMR) provided the impetus for change to the procedures contained within the Army supply system, by calling for the services to develop ways to operate their supply systems more efficiently and effectively. One major area of concern is the funding and handling of depot-level reparables (DLRs).

Presently, the United States Army is the only service operating under a complete, automated supply system, incorporating all activities of storage, handling, receipts, issues, funding, and requisitions (Horn, 1990). This system, thoroughly used within the Army Materiel Command (AMC) is known as the Commodity Command Supply System (CCSS) (Logistics Management Institute, 1987:Ch 2, 2). Although providing much of the information needed by Item Managers (IM) in decision making, this and other supply management systems would be effected by changes to DLR management

procedures. Certainly, if changes in DLR management affected only AMC, those effects could be localized and suitable solutions arrived at expeditiously. But Department of Defense (DOD) changes in DLR management effects the entire Army materiel management system. The case of the CCSS is an example of only some of the areas that must be considered in developing and implementing a DLR management policy, namely: adaptability, efficiency, and effectiveness.

To meet the challenge of managing DLRs more efficiently, the Army is adopting procedures to fund DLRs through a single stock fund, instead of through the Procurement Account Army secondary items (PAA2 funds). The Army is also investigating the possibility of placing DLRs under one central management agency with custodial responsibilities being assigned to the asset managers within the major commands (MACOMs) of the Army's active, reserve, and national guard components. Both approaches have drawn a significant amount of close attention from members of congressional budget committees, as well as, various logistics branches within the Department of the Army (DA).

The task of developing an effective method of single stock funding for requisitioning and repair of depot-level reparables for the United States Army, has been placed under the supervision of the Army's Deputy Chief of Staff for Logistics (DCSLOG). The DCSLOG is the proponent for all logistics planning and policy approval within the United States Army. Although the DCSLOG has been tasked with the

development of the single stock fund, the majority of the actual stock funding research is taking place within the Logistics Management Institute, a non-profit organization under contract with the Army, and the Army's Strategic Logistics Agency, DCSLOG.

Specific Problem

The purpose of this study is to determine the suitability of the DLR stock funding proposal by the Logistics Management Institute (LMI), and the modified LMI proposal submitted by the Strategic Logistics Agency, in meeting the needs of the United States Army.

Investigative Questions

The following investigative questions served as the basis for gathering the necessary data used in determining the advantages and disadvantages to the Army in adopting either of the two stock funding proposals.

a. Are the Army's current stock funding procedures adequately meeting the DOD Review requirements for stock funding of depot-level reparables?

b. What are the redundant elements of the Army's stock funding procedures?

c. Which current supply procedures involving stock funding of depot-level reparables need simplification?

d. Can stock funding procedures be consolidated under central management to improve efficiency, responsiveness, and uniformity among the services?

e. What are the user determined requirements of the Army's stock fund management process?

f. What other concepts are currently being researched in the area of single supply system stock funding?

g. Could the systems currently used by sister services be modified to meet the Army's needs?

h. Which stock funding procedures and practices need to be interoperative among the services?

Research Scope

The scope of this study was confined to determining the advantages and disadvantages of adopting LMI's original stock funding proposal, SLA's modified LMI proposal, or whether an additional proposal should be pursued for stock funding depot-level reparables.

The research involved evaluating the proposals for beneficial contributions towards meeting the DOD requirements as outlined in the DMR and Defense Management Report Decisions (DMRD), as well as the operational needs of the United States Army. Elements of evaluation included: determining the proposal's success in eliminating redundant DLR management actions, incorporation of stock funding procedures that are interoperable with sister services, and the effectiveness of consolidating the management of depot level reparables under a single service's major command, such as Army Materiel Command (AMC), or under a single DOD agency, such as the Defense Logistics Agency (DLA).

Areas of maintenance, transportation, personnel, finance, and medical services not directly related to the supply system activities for stock funding (requisition, distribution, and resourcing of depot-level repair parts, end items, and personnel training) were not addressed in this research.

II. Literature Review

Overview

This chapter provides a general explanation of Army stock funding, the impetus behind single stock funding of depot-level reparables, and a discussion of stock funding proposals.

The Army Stock Fund

The following extract from the Strategic Logistics Program Implementation Plan describes the Army Stock Fund (ASF) in general.

> The Army Stock Fund (ASF) is a revolving capital fund designed to finance supply pipelines between the ultimate user and vendors providing supplies. The ASF operates as a commercial business; purchasing supplies from vendors with stock funds and selling those supplies to customers. It replenishes the capital funds with infusions of cash earned from sales to customers. Stock fund procurements of replenishment items are funded by stock fund operating obligation authority that is apportioned by the Office of Management and Budget (OMB). This obligation authority allows the Army stock fund to order supplies and to pay for them with stock fund cash. Congressional appropriation of funds is required for the purchase of war reserve items, inventory augmentation (other), and for a programmed buy-out account for initial spares. (Department of the Army, 1990a: Ch 1, 1)

Currently, the Army Stock Fund is comprised of separate wholesale and retail levels. The ASF wholesale level customers are comprised of the Army Industrial Fund, the Army National Guard, Army Procurement, ASF retail divisions, Operations and Maintenance, Army (OMA), and other armed services. The Army Stock Fund also encompasses 10 retail

divisions which include eight major commands (MACOMS) and the Defense Supply Service, Washington (DSS-W) (Department of the Army, 1990a:Ch 1, 1).

Why Single Stock Funding

Department of the Army logistics is continuously evolving in direct relationship to changes in force structure and force modernization (Wagner, 1988:5). The Army faces a reduced operating budget, and a renewed call for revision of its supply management procedures (Army Logistician, 1990:10). Senior Army logisticians, in an attempt to develop more efficient methods of operation, are pursuing the development of a single supply system, which, among other initiatives, incorporates a single stock fund for the purchase or repair of the more expensive DLR spares, subassemblies, and assemblies used in repairing Army end items. These Army DLRs are currently funded with procurement funds appropriated by Congress, and are being issued to Army customers at no cost, as shown in Figure 1, below. (Logistics Management Institute, 1990:Ch 1, 3).

The Army currently operates both a wholesale and retail supply system. The responsibility for operation of the wholesale supply system lies with the Army Materiel Command (AMC). There are nine retail divisions, with seven under the major commands. AMC operates its wholesale operations under a standardized system. This is not true of the nine MACOM retail divisions (Logistics Management Institute, 1987:Ch 1, 6). It is those differences among the retail

divisions and the need for establishing a fully integrated finance and supply data management system that affects stock funding of DLRs most significantly. In order to develop an effective and efficient stock funding system, the basic foundation must be prepared sufficiently to handle all interactions necessary for successfully implementing a single supply system.

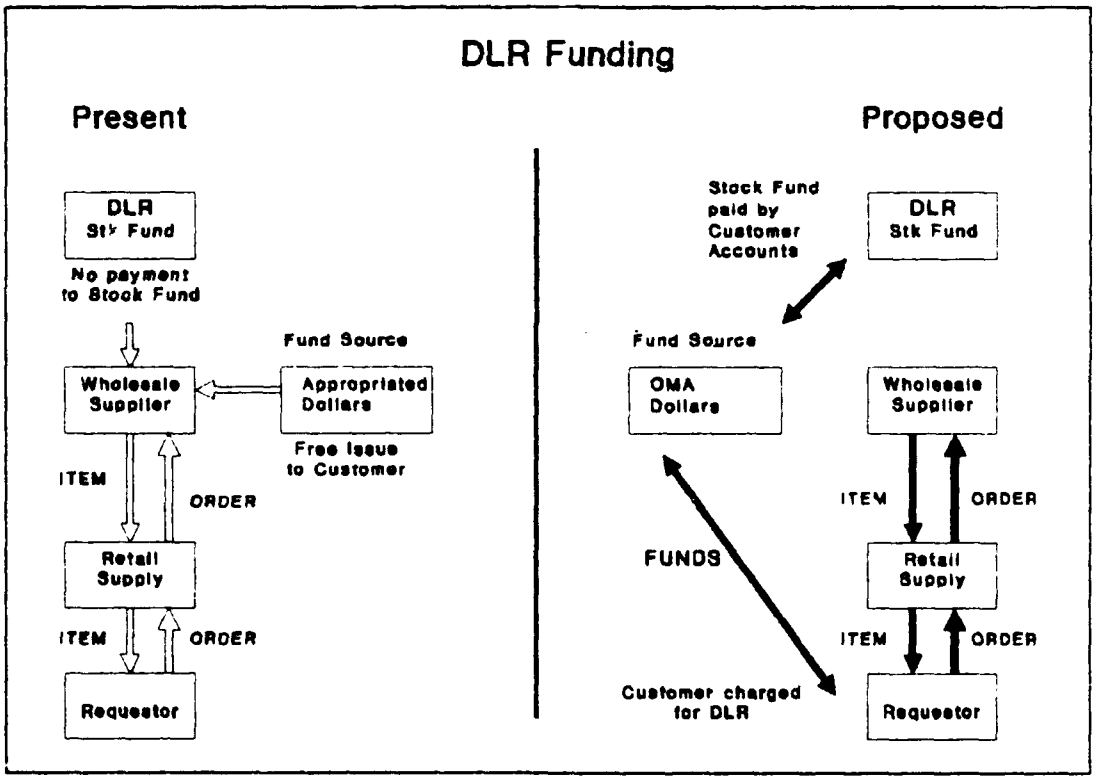


Figure 1. Comparison of DLR Processes

Establishment of DLR purchases under a single stock fund is expected to reduce operational costs and increase visibility of DLR items by wholesale agencies within the Army. This reduction is largely expected to come from the removal of redundant processes, and enhanced visibility of

expenditures and management procedures (Department of the Army, 1990b:Ch 6, 1). Use of single stock funded DLRs is expected to better accommodate emergency spares requirements by reducing the Army's dependency on Congressionally appropriated funding (PAA2 funds). This is because intraservice transfers of stock funds do not require Congressional approval (Stock Funding, 1990).

Stock Funding of Depot-Level Reparables

The Office of the Secretary of Defense established the Defense Management Review (DMR) process to gain visibility on activities intended to provide greater efficiency to DOD operations (Department of the Army, 1990a:Ch 1, 4). The Defense Management Report Decision (DMRD) 901 directed that all costs for, or directly related to, stock funded items must be included in the price paid by customers (i.e., personnel costs, transportation, repair, holding, and disposal costs) (Department of Defense, 1989a: 1-2).

DMRD 904C required military services to stock fund all DLRs (Department of the Army, 1990a:Ch 1, 5). As a result, the various military services began to investigate the steps necessary to implement the decisions of DMRD 904C, and to assess the benefits of stock funding reparables.

The Department of the Navy enjoyed several benefits from adopting single stock fund management of DLRs, which began in 1981. The benefits included: improved material availability, fewer backorders, reduced customer wait-time,

improved unserviceable-item return rates, and decreased customer requirements. While the Navy's procedures during the time of the study were limited to shipboard DLRs (those reparable items normally carried and repaired on ship as part of maintenance inventory), the results did indicate that some definitive measure of success could be translated to other areas and branches of service, such as the Army and Air Force (Department of the Army, 1990c:Ch 1, 2).

Although both the Army and Air Force agreed to adopt the stock funding of DLRs, they did not concur with DMR estimates that they would match the 25 percent savings expected by the Navy. Both services felt that a 25 percent savings was too optimistic and expected savings to range from 10 to 15 percent (Department of Defense, 1989b: 1-2).

An additional area of consideration in comparing the success of any DLR stock funding and management program among the services should be the structure of their respective programs. Both the Navy and Air Force, operate through vertical stock funds. The Army, however, operates under a horizontal stock fund. This horizontal structure differs from the vertical structure of the Air Force and Navy in that the retail divisions of the stock fund are created under each of the Army's MACOMs. In the horizontal fund, wholesale buys from commercial sources and sells to the retail level, which, in turn, sells to the customer. The retail divisions also purchase directly from commercial sources. This is not true in the vertical system. In this

system, the wholesale system does not sell to the retail level, but instead, provides materiel to the retail level and accounts for sales from the retail level to the user. In this structure, direct commercial purchases are not made by the retail levels, but by the wholesale agency.

During September of 1990, the Office of the Assistant Secretary, Department of the Army, issued new ASF policies which addressed funding of depot-level reparables. This policy established Army Materiel Command (AMC), as the agency governing prices concerning reparable exchange for DLRs (Office of the Assistant Secretary, 1990: 7). The relationship of AMC within DA is shown in Figure 2. This relationship is discussed in further detail on page 18.

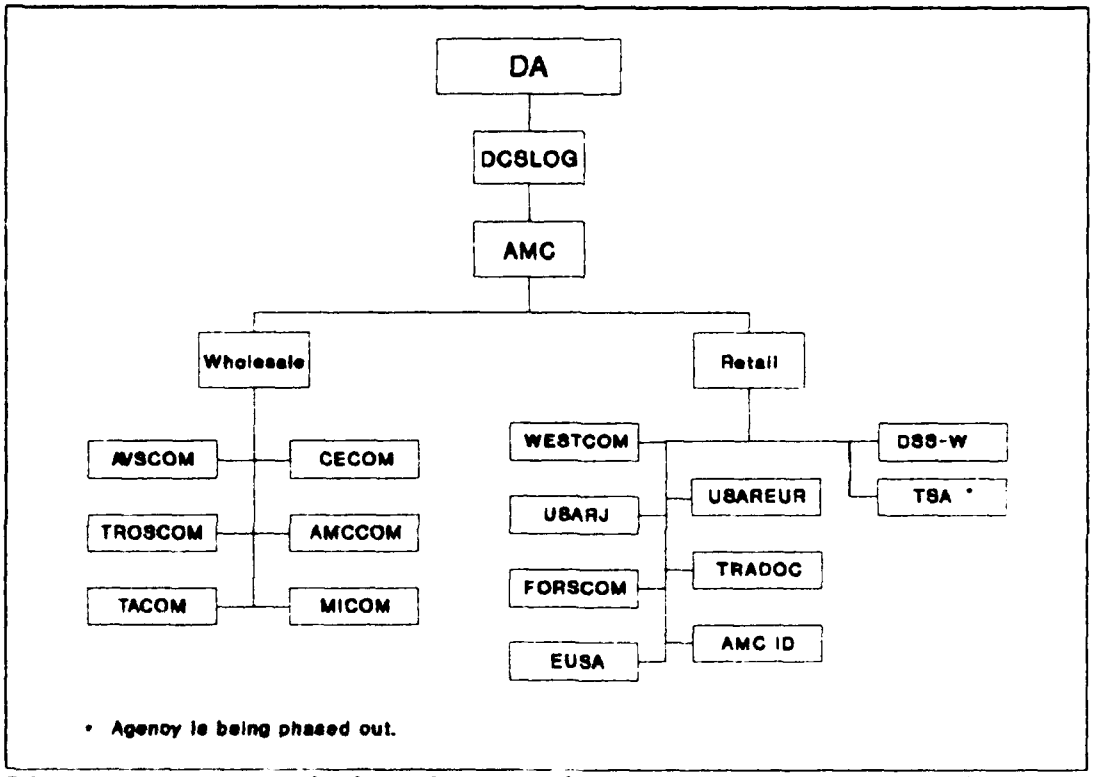


Figure 2. AMC Wholesale/Retail Relationships within DA

Air Force Related Stock Funding Proposals

On 13 November 1990, Headquarters, Department of the Air Force, issued an announcement of its implementation plan for stock funding of depot-level reparables. The Air Force's objective was to "...minimize the impact this change would have on day to day operations by using existing processes." Because of a need for more information, the problem of stock funding initial spares was expected to continue to be an issue as the stock funding plan was placed into practice (HQ, Department of the Air Force, 1990: 1). HQ, USAF, identified the Air Force Logistics Command (AFLC) as the responsible DLR management activity. The USAF/AFLC DLR stock fund relationship is shown in Figure 3, below.

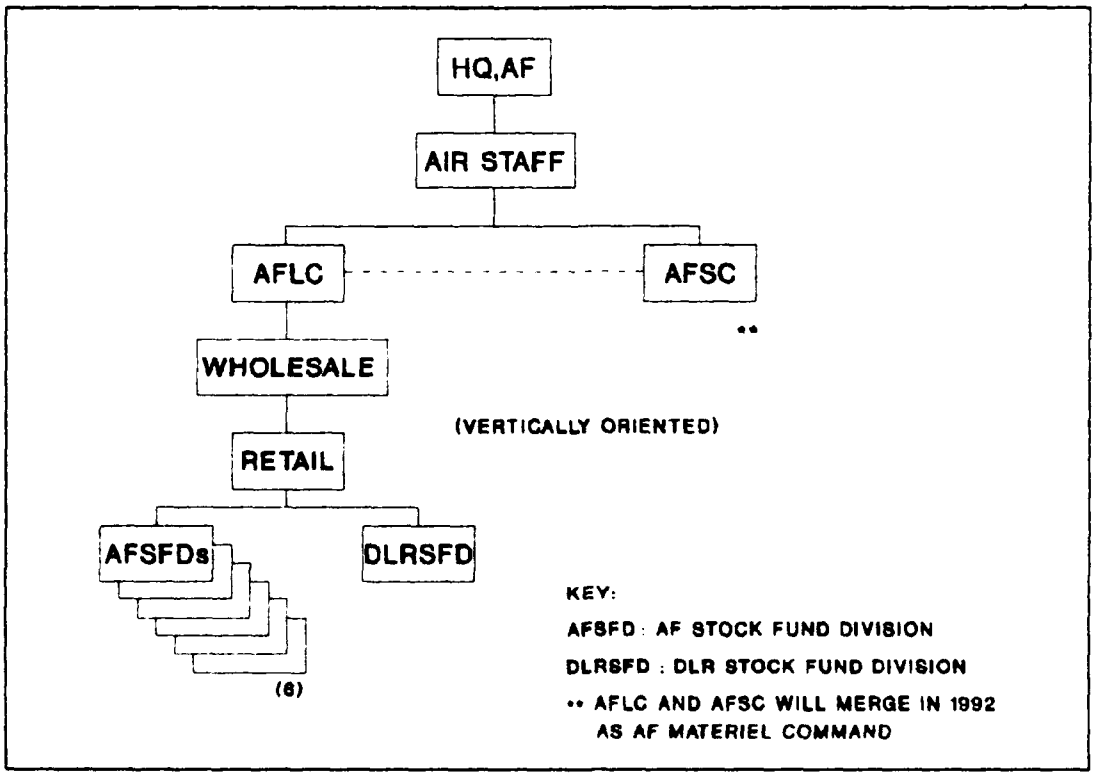


Figure 3. Air Force DLR Stock Fund Management

The Air Force operates its stock fund system from base level upward with six revolving fund divisions. This method is different from the Army's method of stock fund operation. The difference is attributed more to the method of mission accomplishment rather than convenience. The Air Force intends to establish a seventh division specifically for handling DLRs. This division will be referred to as the Repairable Support Division, and will fall under the auspices of HQ, AFLC.

Under the Air Force plan, a two-price system is expected to be used for DLRs. These prices are the standard price and the net price. The standard price, designed to be charged when an item is sold to a customer, includes the forecast acquisition cost and the appropriate surcharges. The net cost also includes the forecast acquisition cost and applies to unserviceable items. The use of surcharges are intended to recover the costs of operating the DLR stock fund and consist of the following: 1) a transportation surcharge, 2) an inventory losses surcharge, 3) an inventory maintenance surcharge, 4) an inventory control point (ICP) operations surcharge, 5) a condemnation charge, and 6) a price stabilization surcharge (HQ, Department of the Air Force, 1990:Ch 1, 3).

The price stabilization surcharge is intended to "balance the stock fund", to insure the maintenance of approved levels of funds within the stock fund account, and "provide consistency with customer budgets, and compensate

the stock fund for prior year gains or losses" (HQ, Department of the Air Force, 1990:Ch 1, 4).

The implementation plan also calls for an annual update of all stock fund pricing, as well as provisions of stock fund analysis to customers of the stock fund. In addition to pricing, the issue of sale and credit of stock fund items should be addressed.

O&M funds for the Air Force units at base level become obligated for DLR requisitions when maintenance activities order the item. At the base level, credits are established at the standard price for repaired assets that are returned to supply which will clear a due in for maintenance (DIFM) record. Credits for unserviceable items are established at a net price and will be awarded when those items are returned to supply in connection with a DIFM action (HQ, Department of the Air Force, 1990:Ch 1, 5). The Air Force's proposal also calls for units to incorporate their DLR requisition needs within the O&M portion of their fiscal year (FY) 93 financial plans (HQ, Department of the Air Force, 1990:Ch 2, 7).

Under the new procedures, depot maintenance receives net price credit for assets returned to supply via non-job repairs and job-related condemnations. Excess and Found on Installation items are awarded credits at standard and net price to be determined by the individual credit indicator associated with each item. Warranty items, as well as items reported with a quality deficiency, receive standard price

credits. Standard and net prices for items managed by other DOD agencies will be set by those managing agencies (HQ, Department of the Air Force, 1990:Ch 1, 5).

Navy Related Stock Funding Procedures

While the United States Navy has experienced several benefits by adopting stock funding of DLRs, differences found in the Navy's supply system should be addressed which may effect the overall success of stock funding DLRs within the United States Army system. The largest differences are found in the financial and inventory management methods of the Navy and Army systems.

All types of supplies acquired from wholesalers are financed by the Army's retail divisions. The Navy's retail divisions, however, only finance hardware and general support items (Logistics Management Institute, 1985:Appendix A, 6). The differences in inventory management methods are in three general areas: asset visibility and control, stock fund echelon structures, and supply performance measures.

The Army uses central requisitioning for wholesale assets, while a significant number of Navy wholesale assets are issued in a decentralized manner with Inventory Control Points (ICPs) receiving notification after the assets are released for issue. While the Navy ICPs have access to retail stocks, Army ICPs do not; so centralized management of retail DLR stocks does not occur (Logistics Management Institute, 1985:Appendix A, 9). These differences can

impact significantly on the Army's ability to centrally manage DLRs throughout the length of its supply pipeline.

In order to gain positive control of DLRs at all levels, access to retail stocks would have to be established for the wholesale managers. Since the Navy does not now distinguish filling of requisitions between wholesale and retail assets, converse to the practice by the Army supply system, computation of supply performance is accomplished differently. In addition to a difference in how the Navy views its wholesale/retail assets, it also configures its support packages differently for each particular vessel. This is true of shipboard spares, mentioned earlier, which were used as part of Navy evaluations as to the success of their DLR management program. Such differences in policy and practice would lead to obtaining satisfaction determinants which are quantitatively different. Statistical measurements are not standard among the services, which could cause DLR performance in savings and opportunity benefits to be in question when comparing them cross-service.

Army Related Stock Funding Proposals

To meet the requirements of the DOD review, the Army solicited the services of the Logistics Management Institute (LMI) to develop a proposal for managing stock funding of depot-level reparables. The LMI proposal called for the establishment of an additional management division under the

Army Stock Fund (ASF) for administering DLRs, and eliminated the retail levels of the supply system from the MACOMs and below (Logistics Management Institute, 1990:Ch 2, 2-3). The Strategic Logistics Agency (SLA), upon receipt of the stock funding proposal from LMI, incorporated several changes. The recommendation for a separate stock fund division was removed, while SLA seems to have elected to retain the retail levels of the supply system (Department of the Army, 1990a:Ch 1, 12-13). A schematic rendering of the current retail supply system is shown in Figure 4.

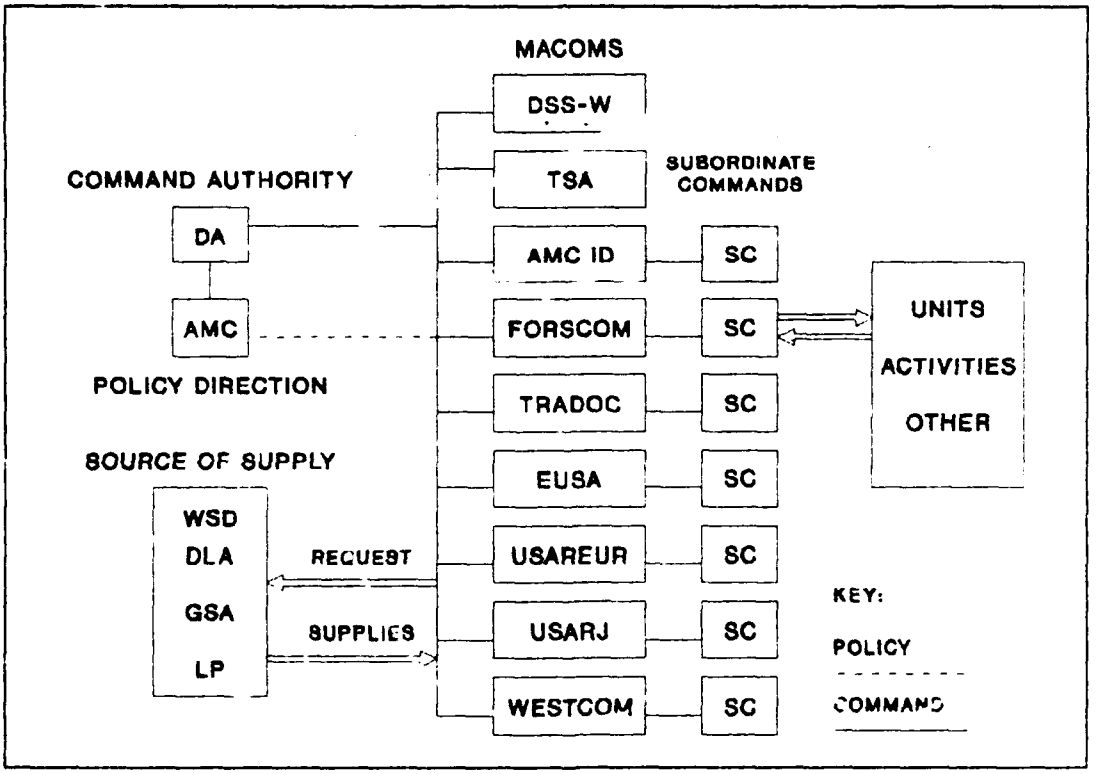


Figure 4. The Army's Current Retail Supply System

As Figure 4, shows, the current retail supply system has several tiers, requiring specific management along each

one of those tiers. MACOMs, also referred to as home offices for the stock fund discussion, have several subhome offices under them. This distribution of accounting and control complicates the retail management of DLRs. Asset reporting under such a distributed retail posture possesses unnecessary diversity. This diversity, by its very nature, encourages mistakes in transaction processing and a loss of item visibility as DLR retrograde assets move through the system.

Each MACOM attempts to individualize its management policies to meet its geographical requirements. As such, the number of differing policies muddles the management waters. LMI proposed to remove the diversity and standardize stock fund control through direct management. Figure 5 demonstrates the LMI retail system proposal.

The LMI recommendation calls for one wholesale and one retail division, managed by the Army Materiel Command (AMC), and the elimination of separate MACOM retail division home offices. All retail division home offices of each MACOM would be replaced by one subhome office. LMI defines a subhome office as..."an administrative office at a subordinate command of a home office designated to perform financial and supply management functions" (Logistics Management Institute, 1987a:Ch 2, 3). The retail division is to be commodity-channeled, financing its branch offices' asset purchases from DLA, GSA, other services, and local purchases (Logistics Management Institute, 1987:Ch 2, 3).

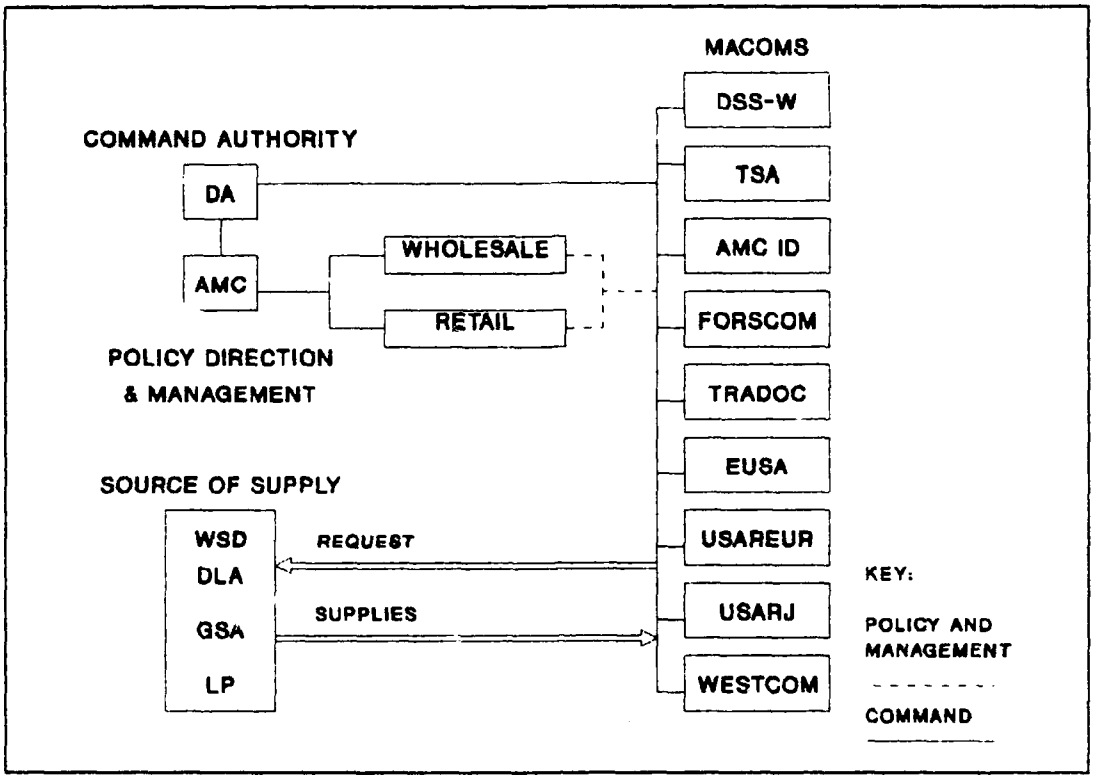


Figure 5. LMI's Retail Stock Fund Management Proposal

The Strategic Logistics Agency (SLA) modifications, although retaining retail provisioning of the stock fund, call for the eventual establishment of a single stock fund division. The difference in SLA's recommendation over that of LMI's is that the SLA modifications call for the eventual elimination of the retail levels entirely. Because the Army has not fully decided on the characteristics of its single supply system, other options for stock fund management have been considered under SLA's modified proposal.

One type of option is an extended wholesale system. Under such an extended system, the retail divisions would be replaced, or removed, entirely. The remaining wholesale ASF division would finance all Army-managed and non-Army-managed

items from actual procurement until the final sale of the item to the customer (Department of the Army, 1989:Ch 2, 2).

A second option is to retain the current wholesale structure, eliminate the retail structure, and classify all retail materiel as OMA-owned. Non-OMA funded support would be considered as reimbursable sales through support agreements (Department of the Army, 1989:Ch 2, 2).

Both vertical and horizontal stock funds are considered as options by SLA's proposal. Under a vertical system, the stock fund would operate in a manner similar to the Air Force. The wholesale system would also own retail materiel, and the retail division, as established, would fund non-Army managed items only. Under the horizontal concept, the wholesale system is retained, and finances materiel acquisition from a Source of Supply (SOS) to a retail division. The establishment of the retail division is, in effect, the same as that division originally proposed by LMI (Department of the Army, 1989:Ch 2, 4).

As recommended under LMI's proposal, the existing wholesale supply system would not change, except for the establishment of a separate wholesale stock fund division to conduct wholesale DLR management as mentioned previously. Currently, the Army Materiel Command is responsible for the management of the wholesale stock fund. AMC accomplishes this management operation through its six commodity-oriented MSCs. Each of these MSCs has both a National Inventory Control Point (NICP) and a National Maintenance Point (NMP).

Figure 6 illustrates the wholesale stock fund management process under the direction of the Army Materiel Command.

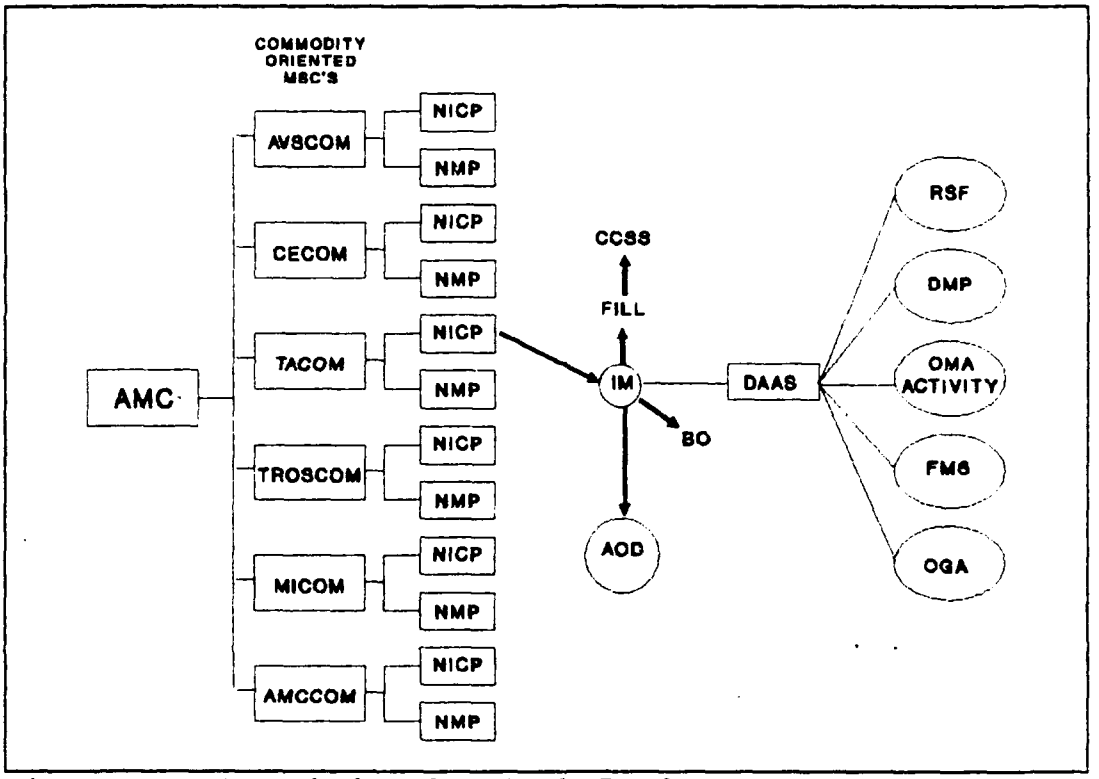


Figure 6. AMC Wholesale Stock Fund Management Process

An Item Manager (IM) is located at each NICP. The IM's asset balance file (ABF) provides a record of depot-stored stock-fund items. The IM directs procured materiel to the various depots under the command of Depot Systems Command (DESCOM), which falls under AMC. Some of the depots are identified as Area Oriented Depots (AODs). These AODs are tasked to provide area support to the Army in the field. As a means to insure the AODs are provided with materiel in sufficient levels to perform this area support role, Inventory Managers specify the recipient AODs based upon

demand history and Headquarters, Army initiated requirements (Logistics Management Institute, 1987b:Ch 2, 2-3).

The Defense Automated Address System (DAAS) provides requisition information for Army Stock Fund (ASF) materiel from various sources (FMS, RSF, etc.) to the NICPs. The CCSS, upon confirmation of on-hand assets from the NICP, causes the generation of a Materiel Release Order (MRO) to the supporting depot or AOD. The difficulty in this situation is that once the MRO is received and the item is shipped, the IM no longer maintains visibility of the item unless it is especially designated for intensive item management (Logistics Management Institute, 1987b:Ch 2, 3). Items shown as not on hand at the depots are back-ordered.

In its initial analysis of the ASF, LMI lists four main purposes of the ASF: "to finance inventories", "to impose financial orientation on supply operations", "to create a financial mechanism for analysis and evaluation", and "to communicate logistics...in the common denominator...of the dollar" (Logistics Management Institute, 1987b:Ch 1, 1-2). LMI believes that the current ASF meets only two of the four purposes listed above--financing inventories, and imposing a financial orientation on Army supply operations (Logistics Management Institute, 1987b:Ch 5, 1-2). LMI intends for its recommended alternative (Appendix A) to improve the current ASF to encompass the remaining two ASF purposes, and improve the utilization of Army Stock Fund financial information in supply policy formulation and operational analysis.

LMI recommends removal of financial management of the retail stock fund from the Finance and Accounting Agencies (FAAs) at installation level. Instead of the FAAs, stock fund financial operations would come under regional stock fund centers. These regional centers would support the various branch offices, which in turn, handle the day to day operations of the retail stock fund. The services provided by the stock fund regional centers would include: "financial inventory accounting and reporting; financial transaction management; interfund, commercial, and customer billings, collections and payments; and stock fund finance and accounting operations" (Logistics Management Institute, 1987a:Ch 2, 4). Additional support is provided to each logistics staff of the MACOMs, and to the subhome offices.

To gain further efficiency in the new retail stock fund, LMI proposes that DSS unit requisitions "be obligated against customer" cite funds "and not against the retail stock fund". LMI's proposal also allows for "separate project budgets" in the areas of fuels and medical/dental material management. Such special management would take place in the subhome office of the retail division (Logistics Management Institute, 1987:Ch 2, 3).

Pricing retains its similarity among both the original LMI proposal and SLA's later submission to DA. The prices are separated into two areas: standard price and net price. Consumable items will not be addressed. Under SLA's implementation plan, standard price includes additional

surcharges, similar to those mentioned in the Air Force proposal, as appropriate. Such surcharges, however, are based on the individual NICP operating expenses, and are not standardized throughout the wholesale system.

Both first and second destination charges are included for serviceable DLRs from the contractor, through wholesale, to the retail supply activity. Transportation charges are also assessed for unserviceable items returned to the wholesale activity from the retail levels (Strategic Logistics Agency, 1991:Ch 2, 1).

Manpower and associated charges are assessed under the heading "Logistics Operations". These charges are to cover all like actions at the wholesale level.

An "Inventory Loss" surcharge is used. This charge is to cover the cost of asset replacement actions necessary to offset losses from inventory theft, obsolescence, or adjustment.

Price Stabilization rates (PSRs) are used to "ensure a stable rate of expenditures in the consumer budgets". This action is intended to "compensate for gains and losses to the stock fund in the prior year".

Net pricing is "the actual or estimated cost to repair the DLR plus the wholesale item beyond repair (wash-out) cost and the surcharges". The wholesale stock fund (WSF) credits the retail stock fund (RSF) the difference of the standard price and net price for unserviceable items (Strategic Logistics Agency, 1991:Ch 2, 1-2).

The DLR funding process, as contained in SLA's proposed implementation plan, is illustrated in Figure 7. SLA is the designated action agency for stock fund development within the Army's Office of the Deputy Chief of Staff, Logistics (ODCSLOG). SLA's implementation plan is currently in effect under DA review.

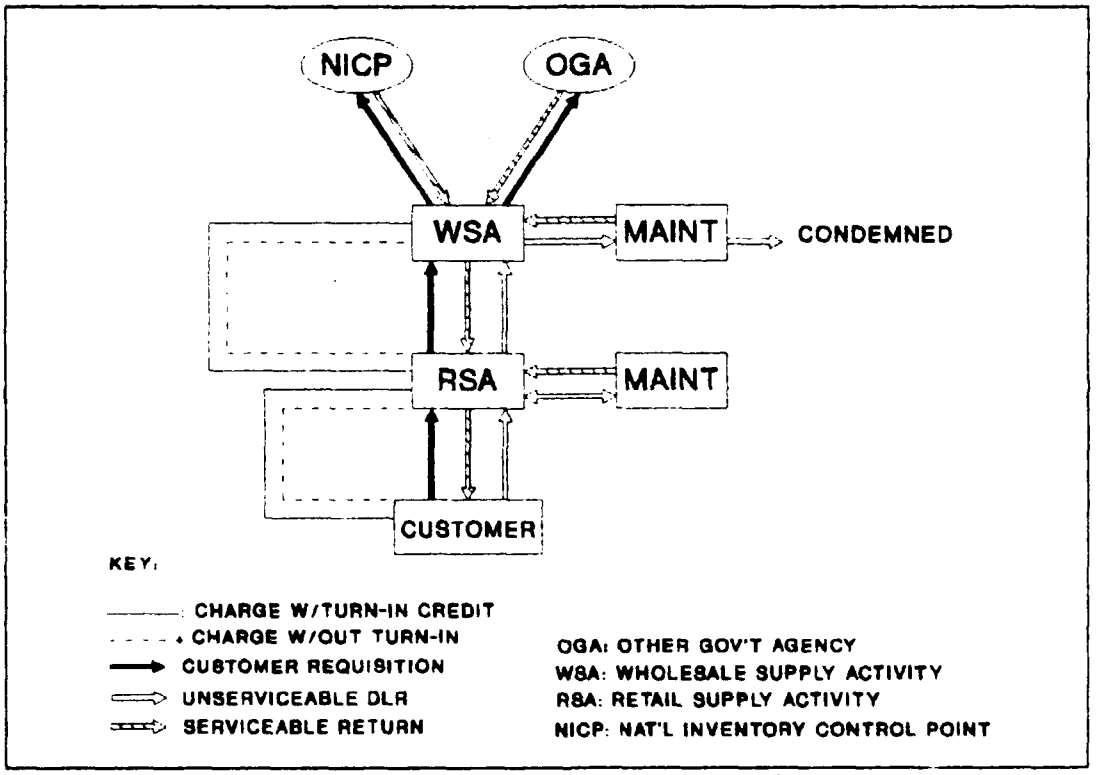


Figure 7. DLR Stock Fund Financial Pipeline

Upon receipt of a DLR item requisition from the customer, the retail activity, once having assured the item is on hand, issues the item to the customer at the appropriate assessed charge. Once the item has been released, it must be replenished at the retail level by procurement or by a return to supply action. If an

unserviceable item is presented to the retail activity as an exchange, and the item can not be repaired at that activity, the item is processed through to the wholesale supply activity. Once received at the wholesale activity, the item is evaluated for serviceability and the retail activity is accessed accordingly for its replenishment.

Under the SLA procedures, the retail customer pays for its replenishment actions (Strategic Logistics Agency, 1991:Ch 1, 4). This is in accordance with LMI's original proposal recommendations.

In a replenishment action, if the item is available at the wholesale activity, it is issued to the retail activity, which in turn, furnishes the item to the retail customer. If the item is not available at wholesale, a backorder (BO) occurs, and the wholesale activity must procure the item from the SOS, using resources of the WSF. Once such funds are expended, the WSF recovers its expenditures from the retail customer. If an item is exchanged by wholesale for an unserviceable item from the retail activity, the retail customer is charged the difference between the standard price and the net price for that item (Strategic Logistics Agency, 1991:Ch 2, 1-2).

Funds are credited to the retail customer accounts by the wholesale stock fund in appropriate amounts for serviceable turn-ins. Thus, the customer, once the item is processed, retains credit for previously expended funds as a result of the transaction at the standard price. Those

requisitions from the customer to the wholesale activity without a like-item-in-kind item for exchange are assessed at the standard price.

Whenever possible, it is the goal of the Army Stock Fund system to recover its losses and costs in a revolving manner from the customer. It is the intent of such policy to encourage "trade off between acquisition costs of material and operating costs. Trade offs...are necessary to achieve...overall operation...at the least cost" (Office of the Assistant Secretary, DA, 1990:Enclosure 1, 3)

The proposal must be able to be implemented prior to the revised DOD implementation deadline of April 1992. This places a significant burden on decision-makers. The LMI proposal, with its minimal modifications to the wholesale management process, would appear sufficient to meet this objective. However, the considerable realignment of the retail offices in the MACOMs may prohibit the successful implementation of the plan by the April goal (Logistics Management Institute, 1987a:Ch 2, 3). All appropriate training and equipment necessary for initial implementation must be completed and in place at required echelons prior to implementation within the Department of the Army. Should retail levels not be prepared to conduct the procedures specified under the DLR stock funding proposal, wholesale management would be inhibited. Interim reports furnished by the contractor conducting the DLR test of the Second Infantry Division (2ID), Korea, seem to underscore the depth

such transitions require, and the importance of adequate prior preparation. Assessment teams evaluating the 2ID test felt that sufficient emphasis for complying with the test criteria was not made by participating battalions. As such, their observations included that behavioral changes must be made in the minds of these participants to address the test seriously (TRESP, 1991a:Sec 2, 2). The reports indicate that lack of visibility of DLR assets during retail retrograde actions is a noticeable problem (TRESP, 1991b:Sec 4, 56). It is also significant to note that DLR processing requirements must be continuously readdressed in short tour areas, such as Korea, because of the higher personnel turnover rates (TRESP, 1991b:Sec 3, 9). This is a direct result of lost knowledge as trained personnel depart. Should such training not continue, effective reporting and funding actions could be denied.

Under the guidelines of SLA's implementation plan alone, approximately 32 separate changes to the automated systems involved in stock funding of DLRs must take place. While a number of these changes are in progress, 11 are not expected to be completed prior to April of 1992. Of those 11 changes, many are concerned with retail-level operations (Strategic Logistics Agency, 1991:Appendix B, 3-8). Seventeen of the 32 changes are identified in Appendix C.

Although the changes to the current system demonstrate the need for sound, effective training, such training is not limited to logistical personnel. Leaders and staff of

operational units must consider DLR funding in their budgets as well. The Training and Doctrine Command (TRADOC) is tasked with establishing instructional programs for the field, and for its various instructional institutions. AMC is incorporating DLR training into logistics management courses at the Army Logistics Management College (ALMC) (Strategic Logistics Agency, 1991:Ch 7, 2).

Early US Army DLR Stock Funding Investigation

Although LMI and SLA have conducted and continue to conduct extensive DLR research, their investigations were not the first US Army inquiries into DLR stock funding. A number of investigative questions were furnished by SLA to the contractor, TRESP and BDM International, Inc., who is actually conducting the test of the 2ID, and 19th Support Command. Similar questions--concerning legal, financial, supply, maintenance, and customer impacts--were raised in a memorandum to the service secretaries of the Army, Navy, and Air Force, by the Assistant Secretary of Defense (Office of the Assistant Secretary, DOD, 1978:Enclosure 3, 1-2). These questions served to guide studies conducted by both the US Army Audit Agency and the ODCSLOG. Questions addressed by the US Army Audit Agency were integrated into the ODCSLOG study.

The ODCSLOG study was conducted by an ad hoc Army staff team. Major areas of concern in the study, submitted in May of 1980, inquired whether DLR stock funding would improve

return rates, and the impact on wholesale, retail, and customer operations. In the study, a comparison of both PAA and ASF coded DLRs was accomplished. The team found that 47 percent of PAA coded DLRs experienced a return rate of over 50 percent, while only 24 percent of ASF coded DLRs experienced such a rate of return (Department of the Army, 1980:Ch 1, 1). The team attributed this to the larger portion of PAA items being intensively managed as compared to ASF items. The study concluded that stock funding DLRs would not directly improve their rate of return.

Four alternatives were addressed by the ODCSLOG team. One such alternative addressed the full implementation of DLR stock funding as proposed by the Office of the Secretary of Defense (OSD). This alternative called for consumer reimbursement of the stock fund. The team considered the impact on budget preparation workloads at command levels to be the greatest consequence of adopting the OSD proposal.

The team predicted the transfer of free-issue items from PAA accounts to the Army Stock Fund would "...increase the volume of transactions processed in the accounting system..." (Department of the Army, 1980:Ch 4, 2). These transactions included obligations, receipts, issues, intransit accounting, billings, collections, credits, and adjustments.

A key observation is that the study inferred the lack of trained personnel with financial expertise at the retail levels, and the unpredictability of maintenance failures

would inevitably "make accurate estimates difficult to obtain" (Department of the Army, 1980:Ch 4, 2).

The Army Audit Agency (AAA) reflects the credibility given to the concerns by the ODCSLOG study concerning financial transactions governing ASF DLRs. This is especially evident in a question raised referring to operating funds being reimbursed in a timely manner. The AAA reported that "prior audits disclosed delays in the creditable return process which precluded timely reimbursement of operating funds". The delays were seen as results of "procedural difficulties at the wholesale level as well as lack of effective follow-up at the retail level". Also seen as causes were losses, mutilation, incorrect coding of documentation, and delay in shipment of return items (Department of the Army, 1979: 2).

The AAA also addressed concerns about accurate item forecasting, fund-use restrictions, and the idea that decreasing OMA dollars would "restrict a commander's operating resource flexibility". The Audit Agency envisioned forecast accuracy for DLR budgeting as dependent on "accuracy of demand data, automated system support, compliance with prescribed stockage guidance" and "quality of personnel" (Department of the Army, 1979: 4). One area, the ability to redirect funds to the area of greatest need, was considered by the AAA to diminish under stock funding DLRs. Ordering of high-dollar items would restrict the availability of dollars for other need assets. The AAA

determined, however, that the availability of items at all levels would be determined by the amount of funds that were "appropriated by materiel category", placing the constraints at the wholesale level (Department of the Army, 1979: 4-5).

These findings were incorporated into the ODCSLOG study conducted in 1980. The ODCSLOG study purposed that since Army stock funded items "do not require Congressional authorizations or appropriations...a shorter planning, programming, budgeting, and procurement system would evolve". Failing to relinquish control of high-dollar items may prompt Congress to shift attention to stock fund operations (Department of the Army, 1980:Ch 4, 3-4). This idea is, in reality, being currently addressed by Congressional staff members.

The ODCSLOG team suggested several advantages for adopting the OSD proposal to stock fund DLRs. These include: simplification of procedures in the wholesale supply system; freeing procurement restrictions by removing such procurements from Congressional appropriations; elimination of Congressional reprogramming actions for funds transfers of DLR items from one functional area to another; increased cost consciousness of consumers at the management levels; and increased installation repair actions to replenish local supply activities and reduce fund expenditures (Department of the Army, 1980:Ch 4, 5-6).

The study lists several disadvantages, including: a decreased rates of return for DLR items; significant

increases in financial management workloads at MACOM levels; increasingly difficult budget justification and subjectivity to reduction by Congress; a possible increase of maintenance workload at installation level; and a lack of expertise at user level that jeopardizes successful stock fund implementation (Department of the Army, 1980:Ch 4, 5-6).

Summary

The US Army, as well as its sister Services, is under direction by the OSD to implement stock funding of DLRs. This is not an insignificant task. Numerous areas must be addressed and evaluated, the scope of which certainly exceeds the capabilities of this research endeavor. Without question, benefits will be realized because of the implementation of stock funding DLRs. To realize these benefits means that changes to the current routine of doing business must occur. Automated systems will increase in importance as the breadth and depth of DLR management grows.

Proportionate with automated systems development, the entire supply system must be evaluated for effective adoption of DLRs to the ASF. As witnessed earlier in this chapter, the Army's sister Services operate under a vertical supply system. This vertical posturing enhances the opportunity to readily assume stock fund DLR management. In the vertical system, supply operations are more centralized, and management perspectives appear to be down-system directed. With this situation, reporting, transacting, and

accounting becomes a less arduous task. The Navy, under its vertical system, is lessening its distinctions of wholesale and retail relationships. The Naval supply system is significantly different from the US Army supply system, aside from its vertical orientation. Yet, the Navy's tactical displacement of combat assets is similar to that of the Army. This similarity in displacement infers that a change to a vertical supply system could, indeed, be beneficial to the Army's supply management needs.

Decentralization of command does not necessitate a decentralization of ownership of DLR assets. LMI's proposal of a central wholesale/retail management entity has significant value. SLA's modification to LMI's original proposal, in keeping a separate retail operation, does not readily relate to the Army's eventual goal of a single supply system. Time is a critical factor in the implementation process. It is, in all probability, the primary cause for the LMI and SLA research recommendations to retain a horizontal supply system posture. Changing to a vertical supply system would inherently be a monumental task to attempt to accomplish in such a short span of time. Such a move would have to be accomplished gradually. This being the case, and the extensive training which must be done to implement the stock fund change requirements to the current supply system, an initial horizontal system approach to DLR management is not only acceptable, it becomes a virtual necessity.

Financial accounting and timely retrograde transaction procedures are paramount to successful implementation of DLR stock funding. Emphasis must be placed on the permanence of the OSD decision to stock fund DLRs. Managers at all levels can not hope stock funding of DLRs will disappear. Ever tightening budgets and a shrinking force structure will necessitate the adoption of stricter management practices. Excess is a measure of the past.

The OSD decision to stock fund is an attempt to bring the Department of Defense procurement and custodial activities into a more efficient and effective stance. Justifiable concerns have been raised by early DLR stock fund research, as well as that conducted by LMI and SLA, in concert with one another on a contractual level.

The on-going Second Infantry Division test is surfacing several areas for concern, providing answers to previously posed questions, and giving rise to still further areas of study, refinement, and design. Training is among a number of issues on the forefront of areas which are receiving Army-level attention.

A single supply system is a step which may not be as far into the future as expected. The in-roads developed by the Army in attempting to determine how best to comply with the OSD DLR directive may prove to support the single supply system concept. The need to adopt a more vertical supply system is growing more and more evident. Once this process is accomplished, the logical transformation upwards to the

single supply system, combining wholesale/retail supply operations, should be the inescapable step that increases the effective management of DLR stock funds.

III. Methodology

Method of Approach

An evaluation was accomplished of stock funding procedures proposed by the Logistics Management Institute and the Strategic Logistics Agency, ODCSLOG, for Department of the Army use. A comparison of the benefits contained in each proposal was made based on an evaluation procedure explained in the section entitled "Decision Criteria". SLA's proposal contains modifications to LMI's original recommendations made in an SLA contracted study. Figure 8 depicts the overall evaluation process.

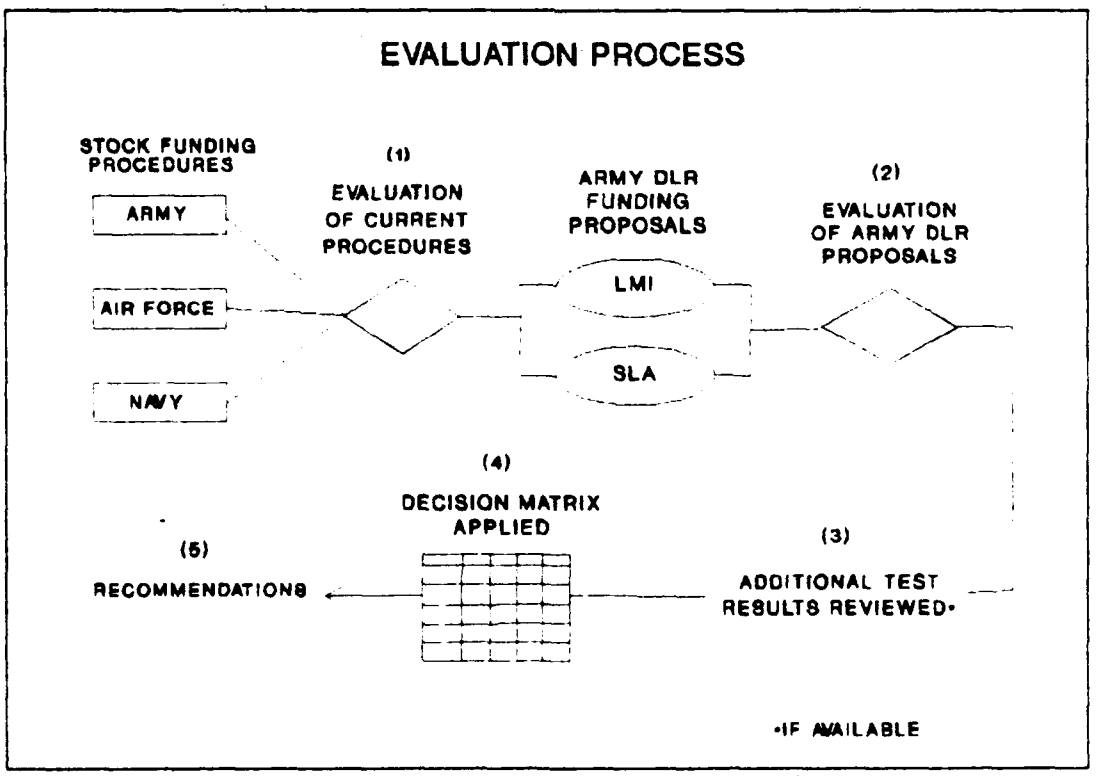


Figure 8. DLR Stock Funding Proposal Evaluation Process

The Logistics Management Institute, in coordination with the Department of the Army, initiated a field test of stock funding of DLRs in the Second Infantry Division, Korea. This field test is an off-line simulation of a supply system operating with a stock funded DLR requirement. Its purpose is to determine the impact of stock funded DLRs within an active Army unit. The Second Infantry Division was not informed of the test. Only the major commodity manager within the Republic of Korea, the 19th Support Command and higher headquarters, were informed of the field test. The test, expected to be completed by May 1991, will be evaluated throughout the year by LMI.

A review of the various stock funding systems of the Air Force, Army, and Navy, was also conducted. These systems were compared on a feature to feature basis, as well as system application, in order to determine the existence of any interoperable stock funding methods between them.

LMI's DLR stock funding proposal, and available Second Infantry Division test data, were reviewed for added value to current Army stock funding methods, or for possible influences for change to the LMI stock fund proposal. Proposal modifications by the Strategic Logistics Agency were checked for added value. The advantages and disadvantages of each proposal were then compared against one another to determine appropriateness for meeting Army and DOD requirements, and whether an alternative approach should be considered.

Decision Criteria

Each proposal had to meet the following criteria (with individual weights shown) to be favorably considered as meeting Army requirements for stock funding of DLRs.

a. Promotes evolution towards a single DLR stock fund management system (Wgt=2.4).

b. Contains DLR stock funding procedures that are interoperable with sister services (Wgt=1.0).

c. Consolidates DLR management (Wgt=1.6).

d. Proposal can be implemented prior to April 1992 (Wgt=3.1).

The overall measurement process is illustrated using a sample decision matrix in Figure 9, while the actual matrix values for the study are shown in Figure 10.

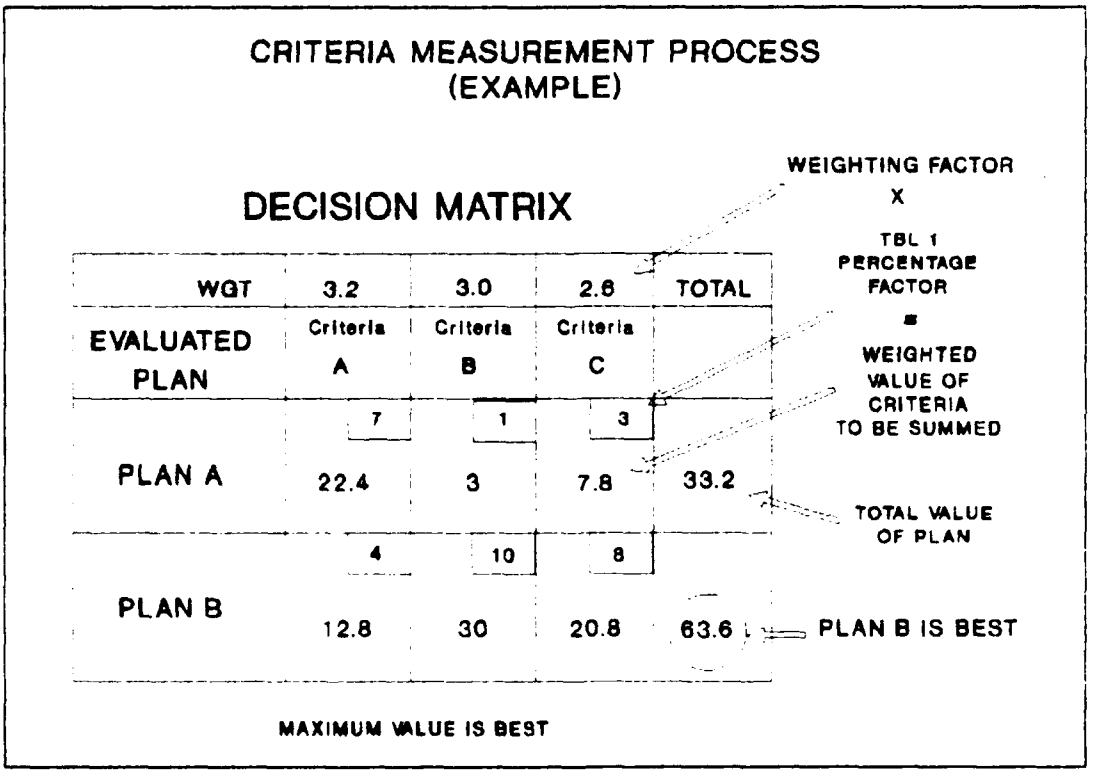


Figure 9. Annotated Decision Matrix Sample

The measure of Criteria A, promotes evolution towards a single DLR stock fund management system, was based on a percentage derived from the number of known wholesale and retail actions that the proposal combines or eliminates. This percentage was assigned a given numerical value from Table 1, which was then multiplied by the weight of the criteria. The resulting value was then entered into the decision matrix shown in Figure 10.

The measure of Criteria B, the number of interoperable DLR stock funding procedures, was based on the total number of identified interoperable procedures contained within the proposal. This number was then assigned a given numerical value from Table 1, which was then multiplied by the weight of Criteria B. The resulting value was then entered into the actual decision matrix shown in Figure 10.

The measure of Criteria C, the consolidation of DLR management, was based on the percentage of known DLR management activities that are centrally managed within the proposal. This percentage was then assigned a numerical value from Table 1, which was then multiplied by the weight of Criteria C. The resulting value was then entered into the actual decision matrix shown in Figure 10.

The measure of Criteria D, whether or not the proposal can be implemented by 1 April 1992, was based upon the revised scheduled times stipulated by DMRD 904C. The discriminating measure for being assigned a value from Table 1, was based upon the earliest date of implementation prior

to 1 April 1992. This value was then multiplied by the weight of Criteria D, and the result was entered into the actual decision matrix shown in Figure 10, below.

CRITERIA MEASUREMENTS

DECISION MATRIX

WGT	2.4	1.0	1.6	3.1	TOTAL
EVALUATED PLAN	Criteria A	Criteria B	Criteria C	Criteria D	
LMI PLAN	5 12.0	2 2.0	6 9.6	2 6.2	29.8
SLA PLAN	3 7.2	1 1.0	4 6.4	1 3.1	17.7

MAXIMUM VALUE IS BEST

Figure 10. Actual Decision Matrix for Funding Proposals

Once all the individual calculations for Criteria A through D were accomplished and entered into the decision matrix, the values were summed across each of the alternative proposals. The decision matrix uses a maximum-is-best decision rule. That is, the proposal which attained the greatest total value on the decision matrix (based on the four decision criteria listed above) was considered the most favored proposal.

TABLE 1

NUMERIC VALUES FOR DECISION CRITERIA A THROUGH D

CRITERIA A AND C		CRITERIA B	CRITERIA D
CRITERIA PERCENTAGE RANGE	PERCENTAGE FACTOR	RELATIVE INTEROPERABILITY	SPEED OF IMPLEMENTATION
91 - 100	10	HIGHEST - 3	LEAST TIME - 3
81 - 90	9	MIDDLE - 2	MIDDLE - 2
71 - 80	8	LEAST - 1	MOST TIME - 1
61 - 70	7	NONE - 0	EXCEEDS DL - 0
51 - 60	6		
41 - 50	5		
31 - 40	4		
21 - 30	3		
11 - 20	2		
1 - 10	1		
0	0		

DL = Deadline

IV. Findings and Analysis

General Comments

This section provides information regarding the analysis and comparison of the proposals and explanations for the entries derived in the decision matrix found in Figure 10, above, and in Appendix B. Appendix B provides a further explanation as to the specifics concerning the sensitivity analysis, weights, and consistency ratio used in the decision matrix.

Recording of Findings

The LMI proposal, as submitted, would best meet the Army's immediate needs. The LMI proposal as modified and subsequently submitted by SLA (referred to in this study as the SLA proposal) retains operational functions within the retail levels of the MACOMs, and thus does not enhance the operational aspects of DLR stock fund management as well. The LMI proposal eliminates the retail-level division requirements of the various MACOM operations. It calls for a centralized wholesale and retail management division to be established. This suggests a superior basis for streamlining and improving accounting and control measures as they are currently practiced.

Removing DLR ownership from retail-level activities does not present a major obstacle to supply system refinement. On the contrary, placing DLR ownership under a

central management activity would simplify stock accountability reporting, reduce redundancy in reporting procedures, and lighten the personnel/resource requirements of the lower echelons of supply management.

The Army proposals maintain a horizontal supply system, which prevent meaningful interoperability and management equity among the services. Definitive, standardized policies and practices for stock funded DLR management do not yet exist. Neither LMI's, or SLA's proposal addresses an Army DLR policy to accommodate this future probable necessity.

Supplementation of Army supply policy by local supply management activities is a wide-spread problem. The Second Infantry Division (2ID) test illustrates a tendency for managers and performance personnel to side-track current procedures, intentionally or not. This tendency poses a barrier to successful integration of any type of DLR management program, regardless of the funding basis. Local agencies and staffs of operational units lack the training necessary at the present time to gain complete system satisfaction of stock funded DLR management.

Although in-depth analysis has occurred, preparation has not kept pace with requirements. Implementation for either proposal will not be fully accomplished before the April 1992 guidelines as revised by the OSD. LMI's proposal would be able to approach the deadline more closely, because the expertise at the wholesale level and within the major

management agencies is in place to successfully integrate the DLR stock fund plan. Elimination of the lower retail divisions, and reduction of accounting actions at installational level, would streamline reporting needs and stem the expertise requirements at those levels.

Automated systems continue to present difficulties for either proposal. Even if left to its current mode of operations entirely, the decreasing Army manpower and resources expected in future years would cause the Army's supply management needs to exceed current automated capabilities. The changes to the automated systems will not be accomplished prior to the original January 1992 deadline. Many changes will not be completed until the revised April 1992 deadline or beyond. As such, efficient, full operation of either of the stock funding proposals will not be possible until late 1992, at best.

Interim reports of the 2ID test in progress, indicate a reduction in DLR wholesale requisitions and an increase in demands for consumables. This would indicate an increase in maintenance workloads for support units in an attempt to offset replacement costs of high-dollar value items. This would appear to be a two-edged sword. Dollar expenditures for ASF items, while decreasing in requisition costs, are rising for repairs. The consumable costs are low, and if not impeding readiness, the practice of increased retail repairs would appear beneficial. Attention does not appear to be given to insure that only authorized repairs are made

at a given level. Repair authority often reflects the skill and experience of maintenance personnel assigned to a given facility. Untrained personnel may pose a problem for DLR repair actions, if, due to faulty repair procedures, the DLRs begin to experience a higher failure rate than previously experienced.

Crediting of returns to customer funds of both serviceable and unserviceable stock funded DLRs remains slow. Credits to the consumer accounts have not been as timely as credits between wholesale and retail activities. The 2ID test results indicate the length of time in crediting to the division lags spend.ng by approximately 50 percent. Because of this lag, an accurate picture of the division's available funds can not be readily obtained. Without further information concerning the effects of the 2ID test it is difficult to ascertain the impacts of either proposal in regards to DLR credits. DLR retrograde difficulties and failure to comply with reporting procedures appears to add to the problem of timely funds crediting.

Stock funding of DLRs has not reduced the return rates for DLRs of the 2ID. Automated tracking problems aside, the emphasis still does not appear to be placed as equally on returning an asset out of an activity's hands as does getting one into an activity's hands. Subsequently, without additional insistence on compliance with DLR return-rate specifications, DLR returns will continue to experience long pipeline delays.

Backorder percentages appear to be decreasing in the 2ID test results. This is a vary guarded finding because of the short period of observation (two months) and the lack of additional information to ascertain the reasons for greater accommodation percentages over the previous month's rate.

Analysis of Findings

Review of the LMI and SLA-modified proposals indicate that SLA has placed the greatest emphasis on the wholesale side of DLR management, with no definitive approach being called for on retail DLR management. This is probably due to SLA's desire to focus its pursuit the Army's goal of establishing a single supply system devoid of wholesale and retail discrimination.

In some cases, a wholesale focus is understandable. The problem lies in the fact that while the single supply system is a desired goal, the retail levels do currently exist. The greater opportunity for mistakes would, in all probability, come from the retail levels. It is in these levels that the most diversity in management policy and practice exists. Concise, common, and clearly-defined procedures must be addressed at the retail level, as long as it exists, to effectively manage stock funding of DLRs. Although LMI recommends establishing a separate retail division for DLR stock fund management, it achieved a higher score (12.0) under Criteria A because its proposal eliminates the numerous MACOM retail offices now in

existence. This elimination establishes a further basis from which a single supply system could be developed.

SLA's implementation plan establishes the Army's stock fund system as a horizontal supply system (Strategic Logistics Agency, 1991:Ch 3, 1). Additionally, the implementation plan does not address the elimination of the separate retail offices under the MACOMs, or the development of a retail division to handle all retail stock fund operations. The result is to consider that the current retail configurations will be retained. This, as pointed out above, would not be the best foundation for a full evolution to a single supply system. SLA received a 7.2 rating under Criteria A.

Where the SLA proposal fails to specifically address a firm recommendation on retail operations, LMI has not fully considered their proposal in terms of interoperability among the other services and agencies of the DOD. Although LMI has provided extensive study in evaluating its various alternatives and has recommended a definitive course of action, it has not fully evaluated the impact of adopting a vertical supply system. Both the Air Force and the Navy currently function under vertical supply systems. Although the United States Army functions on a multi-unit, multi-echelon method of field deployment, it is not alone in that sense. Both sister services function in similar manners, though in a reduced scale. Inter-service cooperation calls for support systems that are interoperable and mutually

beneficial, although not in inventory, at least by function. A vertical supply system would seem to be more conducive to adopting a single supply system, as it is inherently geared to not discriminate between wholesale and retail assets in the long run. Considering this oversight, LMI, still scores higher on the Criteria B interoperability rating (2) than SLA (1). This is because of the adaptability of LMI's proposed plan towards a vertical supply system, in turn, increasing its potential for a greater variety of interoperable applications.

Because the SLA implementation plan does not address retail management consolidation, it fails to provide as effective a retail management posture for DLR stock funding as did the original proposal developed by LMI. Under SLA's implementation plan, operations, other than funding, appear business as usual. This opens the door for increased error at the retail level. It increases reporting requirements and regional flavoring of policies and procedures which could have been avoided under a centralized retail division. In respect to this lack of streamlining by SLA, the original LMI proposal, recommending a removal of decentralization from the nine major retail divisions, received a 9.6 rating in Criteria C. This finding compares to SLA's modified proposal which retains the original LMI recommendation of a centralized wholesale division, but does not consolidate operations at the retail levels. SLA received a 6.4 rating in this area.

The original deadline for implementation of the stock funding initiatives was January 1992. Under this deadline date, neither LMI's proposal or SLA's showed much promise for meeting the required date. With the date adjusted to April 1992, by subsequent directives from the DOD, LMI's recommendation of wholesale/retail consolidation would appear to have the best chance for approaching the implementation deadline. This advantage is thwarted, though, when the required changes to the automated systems under the current reporting procedures are taken into consideration. Under Criteria D, the implementation criterion, LMI received a rating of 6.2. SLA's implementation plan calls for virtually all required automated changes to be completed prior to, or as of, April 1992. The data contained in the 2ID test interim reports suggests that this may not be the case. Because of the greater number of subordinate retail activity functions required, the higher probability is that the system still will not be functioning fully by April 1992. SLA's proposal, therefore, to retain a separately operating retail-level structure under the MACOMs received a 3.1 rating.

V. Conclusions and Recommendations

Conclusions

The original proposal of LMI, as submitted to SLA, appears to be the better of the two proposals. On the Decision Matrix, LMI achieved a 29.8 rating overall, compared to SLA's modified proposal which received a 17.7 rating overall. While a number of the observations made in Chapter 4 are subjective in nature, it is largely due to the shortfall in information concerning stock funding of DLRs. Even with the amount of analysis completed by LMI, SLA, AMC, and others within the Army, much remains to be reviewed and considered.

Results of the test studies being conducted by TRESP and BDM International, and others, promise to sustain, as well as rebuke a number of previous conceptions concerning stock funding of DLRs. Evaluation of the attempts by the Army's sister Services to implement stock funded DLR management has revealed an apparent relationship with supply system configuration and implementation success. Evaluation of such attempts has also raised the issue of credibility when comparing statistical and documentary information gathered from among the different supply systems. It is especially important to avoid comparing apples and oranges when assessing expected benefits. Evaluation of available information provides cause for concern that the April 1992 deadline will not be met.

In pressing the Services for a full implementation by a specific date, the OSD may have caused a large number of oversights to be made. A more phased and deliberate approach to stock funding and centralized management would yield greater benefits. As it now stands, the proposals reveal a path towards continuous restructuring and reworks. The Army can not expect to, and will probably not, develop a viable DLR management system prior to April 1992.

The study also raises the question as to the actual movement by the Army to adopt a single supply system. This approach goes beyond the basic supply management question. As the proposals suggest, an integrated approach is called for that encompasses not only supply, but all the logistical disciplines, while maintaining a clear line of communication to the supported units. The study has revealed that a major procedural change, no matter what the type or purpose, can not occur successfully in a vacuum. It has been clearly indicated in each proposal and in the 2ID test results, that a viable training and information package must be put into service. Yet, at this study's conclusion, a major, in-depth training package has not been released. Unit leaders are still lost in the mist of DLR stock fund murmurings.

The most significant result is this--any major effort to devise a cost-reducing, efficient, effective supply management system to incorporate stock funding of DLRs within the Army must be approached incrementally and methodically. The study uncovered a lack of serious concern

in unit and intermediate-level leaders. It is a finding of this study that a sudden implementation of any major stock funding changes within the Army's wholesale/retail configuration under this attitude would prove to have numerous impacts. Without the systems ready to function, and the personnel fully trained and geared to accept this new approach, problems are bound to occur.

Recommendations

As a result of this study, several recommendations are presented. In order to achieve a fully functional, and efficient single supply system, that is interoperable and standardized across the DOD, a vertical supply system approach should be considered. Common policies and practices should be addressed within the DOD and its agencies, for adoption into the Army supply system.

The move to a vertical system should incorporate the establishment of a central management activity, as suggested in the original LMI proposal. The separate retail activities within the MACOMs and operating agencies should be eliminated. If a vertical supply system is not feasible at this time, retail-level stock fund management should be centralized under a single ASF retail division. This centralization would consolidate accounting and reporting requirements and reduce redundant operations among the Army's many supply activities. All essential training of retail-level personnel should be completed before the

implementation of the DLR stock funding plan. This is in respect to the April 1992 deadline. If needed, priority of the training package development and distribution should be upgraded.

Manual procedures should not be an impeding factor in the success of DLR stock funding, but merely be realized as an interim step while awaiting automated systems programming and development. The recommendation of adopting centralized DLR management under a vertical supply system would lessen the automation change requirements.

It is further recommended that the OSD conduct an extensive analysis of the feasibility of centralized logistical support for the services, and that a central agency be determined for the development and implementation of a standardized, interoperable supply system for the armed services and DOD agencies.

Appendix A: LMI's Recommendations for the Army Stock Fund

GENERAL INFORMATION

LMI proposed six major recommendations for changes to the current ASF as its alternative for incorporating stock funding of DLRs. They are listed below.

MAJOR RECOMMENDATIONS

1. Reorganize the ASF to a horizontal structure containing one wholesale and one retail division under AMC; establish the retail division as commodity-channeled; eliminate the retail stock fund divisions of the MACOMs; and consolidate retail level ASF financial inventory accounting and reporting into regional operational centers.

2. Obligate Direct Support System (DSS) unit requisitions forwarded to a wholesale stock fund or commercial supply source only against the customer funds cited on the requisition and not against the retail stock fund.

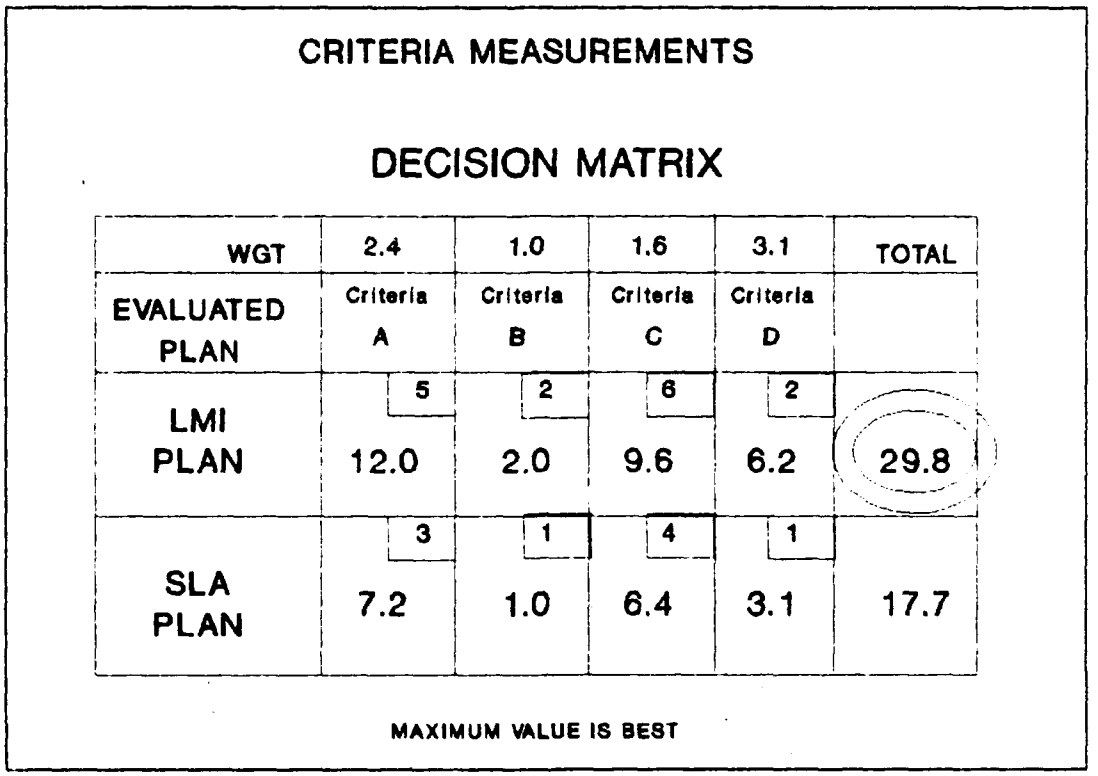
3. Transfer the Defense Supply Service-Washington (DSS-W) supply mission to the General Services Administration (GSA). Until GSA assumes operation of the supply centers, eliminate DSS-W's retail stock fund and use a customer fund to finance inventory for the supply centers.

4. Assign to TSA the Service Item Control Center (SICC) responsibility for subsistence, clothing and textiles, and expand TSA's mission to include operation of the Troop Issue Subsistence Activities (TISAs).

5. Standardize performance analysis and evaluation techniques for stock fund operations and broaden their scope to encompass analysis of trends and comparison of financial execution with original budget forecasts.

6. Establish formal career development and training programs for stock fund managers.

Appendix B: DLR Stock Funding Decision Matrix



CRITERIA MEASUREMENTS

DECISION MATRIX

WGT	2.4	1.0	1.6	3.1	TOTAL
EVALUATED PLAN	Criteria A	Criteria B	Criteria C	Criteria D	
LMI PLAN	5 12.0	2 2.0	6 9.6	2 6.2	29.8
SLA PLAN	3 7.2	1 1.0	4 6.4	1 3.1	17.7

MAXIMUM VALUE IS BEST

Figure 11. Actual Decision Matrix for Funding Proposals

1. Weights were established by determining which evaluation Criteria, A through D, was preferred when ranked amongst one another--A in regards to B through D, B in regards to C through D, and so on.

2. A sensitivity analysis was conducted for the assigned weights. This was accomplished based upon the likelihood that a decision on a proposal would change if a criterion's weight would increase or decrease by one measure--i.e., 2.5 increased to 3, or 3 decreased to 2. Criteria A through D rated "Not Sensitive".

3. The weights given to Criteria A through D were further checked for consistency among the preference ranking as outlined in paragraph 1, above, using a consistency ratio. The consistency ratio determines whether an erratic approach was used in establishing the criteria preference ranking. The consistency ratio for the matrix is considered sound if a ratio of 90 percent, or better, is achieved. The consistency ratio for the decision matrix is 91.07 percent.

4. A multiplication factor was developed for each of the criteria used in the proposal evaluation. This factor was derived by assigning a number value to a given proposal based on the corresponding values per criterion contained in Table 1. Once the multiplication factor was determined, and placed in the corresponding box of each cell of the matrix, it was then multiplied against the criterion's individual weight. This product was then placed in its respective cell.

5. The total for each proposal was derived by summing the products of each proposal's criteria across its given row. This meant that all values for Proposal One, in row one, by column, were summed left to right. The proposal with the highest total was considered best.

Appendix C: SLA Automated Systems Change Requirements

GENERAL INFORMATION

The Strategic Logistics Agency's 1991 implementation plan identifies approximately 32 automated changes that must take place to accommodate stock funding DLRs. Eleven of these changes are not expected to be completed by any time significantly short of the April 1992 time period. Seventeen of those expected change requirements are listed below.

AUTOMATED CHANGES

1. Programming of the Budget Backup and Support System (BASS).

2. Programming for standard crediting of DLRs upon implementation of DMRD 904 and on-line access to MRDB.

3. Programming of MILSTEP/MILSTRIP for reports relabeling.

4. Programming of long supply assets value passing concerning serviceable assets.

5. Programming to add PAA-2 items to the Backorder Cancellation Report (April 1992).

6. Programming of Automatic Feed or Rebuild Schedules from RDES to maintenance (April 1992).

7. CASCOM development of logic/system design for DLR management inquiry reports (Retail: April 1992).

8. CASCOM development of logic/system design for separate credit table for unserviceable DLR returns (Retail: April 1992).

9. CASCOM development of logic/system design for maintenance work order process revision (Retail: April 1992).

10. Programming to consider unserviceables in Net Asset Computation for Replenishments for DS4 (Retail: April 1992).

11. Programming changes to daily cycle replenishment for nonrecurring demands in DS4 (Retail: April 1992).

12. Programming changes to demand analysis on automatic requisitioning objective increase for DS4 (Retail: April 1992).

13. Programming changes to daily cycle issues for nonrecurring demands causing issues to below the requisitioning objective (Retail: April 1992).

14. Programming changes for unserviceable maintenance returns receipts for DS4 (Retail: April 92).

15. Impact assessments programming changes for excess maintenance work orders for SARSS-1 (Retail: April 1992).

16. Impact assessments programming changes for excess from inventory process for SARSS-1 (Retail: April 1992).

17. Impact assessments programming changes for excess from location change process (Retail: April 1992).

18. Development of logic and system design to enable MACOMs visibility of DLRs (Financial: April 1992).

Appendix D:Glossary of Terms and Acronyms

AMC	Army Materiel Command
AMC ID	Army Materiel Command, Installation Division
AMCCOM	Army Munitions and Chemical Command
BASS	Budget Backup and Support System
BO	Backorder
CASCOM	Combined Arms Support Command
CCSS	Commodity Command Standard System; a system encompasses all aspects of retail and wholesale supply functions from user to Department of the Army.
CINFARS	Command Integrated Financial Accounting and Reporting System
DA	Department of the Army
DAAS	Defense Automated Address System
DARCOM	Development Acquisition and Readiness Command
DBMS	Data Base Management System
DCSLOG	Deputy Chief of Staff, Logistics
DELRAP	Depot-level Reparable Action Plan
DESCOM	Depot Systems Command
DLA	Defense Logistics Agency
DLR	Depot-level Reparable; a durable item that if unserviceable, can be economically repaired and made serviceable. If a DLR is unable to be economically repaired at DS/GS levels, the item is returned to depot for repair or condemnation and disposal.
DMMC	Division Materiel Management Center
DMP	Depot Maintenance Programs
DMRD	Defense Management Report Decision

DS	Direct Support
DS4	Direct Support Unit Standard Supply System
DSS	Direct Support System
DSS-W	Defense Supply Service, Washington
EUSA	Eighth US Army
FAA	Finance and Accounting Agencies
FMS	Foreign Military Sales
FORSCOM	Forces Command
GS	General Support
GSA	General Services Administration
ICP	Inventory Control Point
IM	Item Manager
LP	Local Purchase
MACOM	Major Command
MICOM	Missle Command
MILSTEP	Military Supply and Transportation Procedures
MILSTRIP	Military Standard Requisition and Issue Procedures
MSC	Major Subordinate Command
NICP	National Inventory Control Point
NMP	National Maintenance Point
NSN	National Stock Number
ODCSLOG	Office of the Deputy Chief of Staff, Logistics
OGA	Other Government Agencies
OMA	Operation and Maintenance, Army
OSD	Office of the Secretary of Defense
PAA	Procurement Appropriation Army

PAA-2	Procurement Appropriation Army Secondary
PA2	Procurement Appropriation Secondary
RO	Requisitioning Objective
RSF	Retail Stock Fund
SAILS	Standard Army Intermediate Level Supply System
SAMIS	Supply Accounting Management Information System
SARSS	Standard Army Retail Supply System
SICA	Secondary Inventory Control Activity
SICC	Service Item Control Center
SOS	Source of Supply (Industry, DOD sources, etc.)
STANFINS	Standard Financial System
STARFIARS	Standard Army Financial Inventory Accounting and Reporting System
TAC	Transaction Account Codes
TACOM	Tank Automotive Command
TISA	Troop Issue Support Activity
TSA	Troop Support Agency
ULLS	Unit Level Logistics System
USARJ	US Army, Japan
WESTCOM	Western Command
WSD	Wholesale Support Division
WSF	Wholesale Stock Fund

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Vita

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This study investigated the applicability of adopting a single supply stock funding procedure for depot-level reparables within the Department of the Army. A subjective comparison was made of a major proposal for depot-level reparable stock funding developed under contract by the Logistics Management Institute, in association with the Strategic Logistics Agency, and a modified version of that proposal later submitted by the Strategic Logistics Agency. Each proposal was appraised for its affect on adaptability to a single supply system, centralization of management functions, interoperability with other services, and speed of implementation. Field test results and early studies in stock funding were used in the analysis. Using a numerical decision-making process, whereby a point-value was assigned for the given evaluation criteria, the investigation revealed that of the two proposals the Logistics Management Proposal best suited current Army needs. The study further revealed that a centralized management policy under a vertical supply system for stock funding of depot-level reparables would seem more effective and appropriate than a decentralized, horizontal supply system.

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